SPS Deployment for Version 4.2

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Debbie O'Rourke – JPMO

Greg Youmans - AMS

Serving the Warfighter Around the World

SPS

Standard Procurement System

Site Readiness Information

- **Server Sites will receive a pre-upgrade package approximately eight (8) weeks prior to AMS arriving on-site.**

- **The Sites will be required to review documentation for correctness, run JPMO provided scripts, and provide specific information regarding servers, databases, etc.**

- **This information will be provided back to the JPMO for a determination on the site's readiness for an install/upgrade.**

Site Readiness Information

- **JPMO Pre-Deployment Package includes:**
  - Cover Letter
  - Measures of Success (MOS)
  - PD2 System Administrators Upgrade Installation Guide (SAUIG)
  - Install Guides
  - Release Notes
  - Site Readiness Pre-Upgrade Worksheet
  - Instructions for obtaining and printing the Sybase Error Log, Backup Log, DBCC, and Database Statistical Information

Site Readiness Information Conti.

- **JPMO Pre-Deployment Package contains:**
  - Several pages of information that is required in order to determine the condition of a site, such as:
  - Specific information on the server
  - Sybase Database Devices
  - Maintenance Procedures
- **Pre-Upgrade Worksheet**
  - Site Information
  - Site "Key" Personnel
  - Remote Site Information

Site Readiness Information Conti.

- **Sites will need to run specific scripts against their server to provide the following information:**
  - Copies of the Sybase Error log and Backup Log
  - Output of DBCC commands
  - Pre-Upgrade Database Statistical Information
- **Sites will not be considered "green" until the Pre-Deployment package and the outputs from the scripts are returned and reviewed by the JPMO and AMS, approximately 4 weeks out.**

Deployment Schedule Review

- **JPMO Remaining Capacity to Deploy through Version 4.2 Increment 1 & 2**

  - 5 teams – through the end of December 2003
  - 7 teams - 5 January to 25 June 2004

Target Downtimes

Database Size	Site Downtime Target	Hardware Requirements
Under 15 GB	48 hours	Dedicated Machine NT Server: Dual Processor 733 Mhz, 2 GB RAM Unix Server: Dual Processor, 2 GB RAM
15 GB – 25 GB	72 hours	Dedicated Machine NT Server: Dual Processor, 900 Mhz, 2 GB RAM Unix Server: Dual Processor, 4 GB RAM
Over 25 GB	96 Hours	Dedicated Machine NT Server: Dual Processor, 900 Mhz, 2 GB RAM Unix Server: Dual Processor, 4 GB RAM

Downtime Assumptions

- **Site Downtimes targets are for single database sites. Multiple database sites will be evaluated on a case-by-case basis to determine the appropriate downtime target**
- **Site personnel are available if needed 24 hours per day for the duration of the install/upgrade at each site.**
- **AMS will install/upgrade the server and up to 10 clients at the server site**
- **Downtime starts when the users are locked out for the initial database backup event and ends when the upgrade is complete and the Deployment team notifies the SA that PD2 users can be unlocked.**

Managing to the DIPR Schedule

- **Planning for a Successful v4.2 Deployment:**
  - Weekly DIPRs between deploying Desk Officers held every Tuesday
  - JPMO Pre-Deployment Packages sent approximately 8 weeks out for CONUS and 12 to 20 weeks out for OCONUS
  - Discussion of the Weekly Schedule to ensure Site/Deployer Readiness
  - "Green" Readiness Status approximately 4 weeks out
  - Package submissions need to contain any additional work that is required while on-site – extensive CLIN pricing for additional work is available to all sites

Managing to the DIPR Schedule: CONUS

- **Weekly Countdown for a successful deployment:**
  - 8 weeks out (Min.): JPMO sends Pre-Deployment Package
  - 6 weeks out: JPMO receives Pre-Deployment Packages response from site
  - Weeks 6 and 5: JPMO and AMS evaluates Site Readiness
  - 4 weeks out: Definite Deployment Decision is made – determination of "Green" status
  - 3 weeks out: Travel arrangements are made
  - 1 week out: AMS confirms kick-off time with site

Managing to the DIPR Schedule: OCONUS

- **Weekly Countdown for a successful deployment:**
  - 12/20 weeks out: JPMO sends Pre-Deployment Package
  - 10/18 weeks out: JPMO receives Pre-Deployment Packages response from site
  - Weeks 10 and 9/18 and 17: JPMO and AMS evaluates Site Readiness
  - 8/16 weeks out: Definite Deployment Decision is made – determination of "Green" status
  - 6/14 weeks out: Travel arrangements are made
 - 2 weeks out: AMS confirms kick-off time with site

"GREEN" Status for Site Readiness

- **For a "Green" Readiness Rating, the following must be met:**
  - Hardware, Software, and Infrastructure meets at least the minimal JPMO-approved requirements for v4.2
  - Hardware is set up and configured at least 4 weeks out
  - Technical/Functional personnel are scheduled
  - Site personnel have completed all pre-install tasks
  - Site has acknowledged receipt of all documentation
  - Site clearances have been obtained for install team
  - All permissions for access to servers and workstations have been obtained.

Process Overview

- **The following process flow illustrates the steps of the JPMO approved upgrade process.**
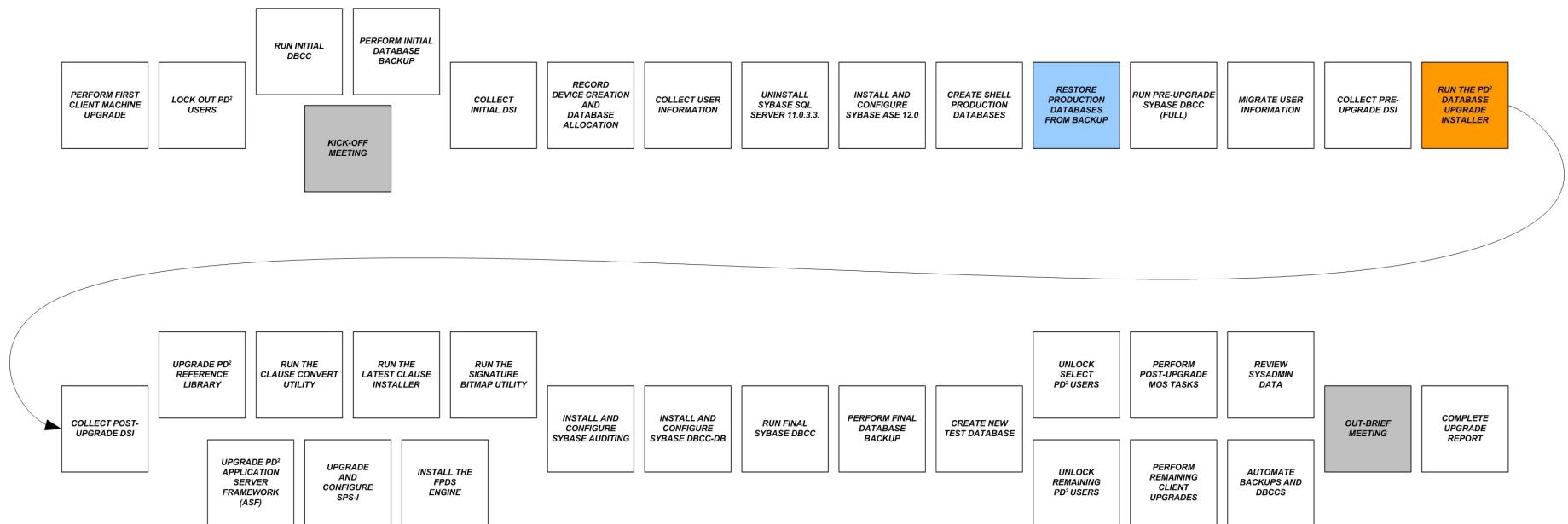
Deployment Kick-Off Meeting

- **The Deployment Kick-Off Meeting gives the site and the AMS Deployment Team the opportunity to discuss SPS deployment and the PD$_2$ upgrade process**

- **Topics include:**
  - **Introduction of the AMS Deployment Team (AMS)**
  - **Review of the Pre-Deployment Readiness Package**
  - **Review of the PD$_2$ upgrade process and schedule**
  - **New PD$_2$ v4.2 License Key**

- **This meeting will be scheduled in advance of AMS arrival on-site and should last no more than one hour**

Perform First Client Machine Upgrade

- **AMS will install the PD^2 v4.2 client software on a workstation designated by the site. This workstation should be:**
  - **The site's best performing workstation**
  - **In close proximity to the Database Server**
- **Each PD^2 client workstation will be installed with the following software:**
  - **Procurement Desktop-Defense v4.2**
  - **Cognos Impromptu/Powerplay**
  - **PD^2 Cognos Catalog (local install or network install)**
  - **PD^2 Reference Library (local install or network install)**
  - **Sybase Central**
  - **SQL Advantage**

Lock Out PD² Users

- **Before proceeding with the upgrade it is important that the user community is prohibited from adding any additional information into the database**
  - **AMS will work with the site to determine the exact time that users must exit the system**
  - **The most efficient way to ensure that users are not able to access the system is to lock the associated Sybase logins**
- **From this point forward, the site is considered to be "down"**

Initial Sybase DBCC

- **AMS will run an initial Sybase database consistency check (DBCC) on the PD^2 production database**
- **AMS will review DBCC output prior to performing any and all backups so that issues can be addressed before proceeding with the upgrade**
  - **DBCC checkdb**
  - **DBCC checkalloc**
  - **DBCC checkcatalog**

Initial Database Backup Procedures

- **AMS will review the Sybase Error Log prior to performing any and all backups**
- **Backup SQL Server 11.0.3.3 Databases**
  - **PD^2 production database**
  - **SPS-I Interface Database (IDB)**
  - **All Sybase system databases**
  - **Databases belonging to SPS add-on products (e.g., AcquiLine and ERS)**
- **AMS will review the Sybase Backup Log to ensure the successful completion of the backup process**

Collect Initial DSI

- **AMS will collect Database Statistical Information (DSI) in order to ensure data integrity throughout the upgrade process**
- **Row count information will be recorded for all user tables within the PD^2 production database**
- **A database snapshot utility records a number of data points within the PD^2 production database including:**
  - **A comprehensive summation of all desktop items within the PD^2 production database sorted by object-type**
  - **A spot-check for the contract line item (CLIN) price of approximately ten percent (10%) of every CLIN in the PD^2 production database**
  - **A summation of line item quantities and unit prices of all documents in the PD^2 production database**

Device Creation and Database Allocation

- AMS will gather device information for the PD^2 production database including:
  - Size of the database devices
  - The order the database devices were created
  - The order in which the database was altered onto the database devices
- This information will be vital to rebuilding the current databases on Sybase ASE 12.0.0.4.

Collect User Information

- **AMS will ensure all SQL Server 11.0.3.3 user information (e.g. server logins, database users) has been recorded**
- **This information will be used to re-create users after the upgrade to ASE 12.0.0.4 has been completed**

Uninstall Sybase SQL Server 11.0.3.3 (NT/2000 only)

- **The 11.0.3.3 version of Sybase needs to be removed completely from the server before Sybase ASE 12.0.0.4 can be successfully installed.**
  - **Completion of this step is not necessary for those sites running Sybase on a UNIX server.**
- **AMS will run the Sybase uninstall routine from the Sybase CD.**

Install and Configure Sybase ASE 12.0.0.4

- **AMS will install Sybase ASE 12.0.0.4 in accordance with the *PD₂ 4.2 Increment 1 Installation Guide*. The installation includes the following tasks:**
    - **Install ASE Open Client Components from PD₂ CD**
    - **Install/Unpackage ASE 12.0 Server Components**
    - **Install Sybase EBF (12.0.0.4)**
    - **Create Adaptive Server (using sybconfig)**
    - **Set ASE 'sa' Password**
    - **Expand ASE master and tempdb databases**
    - **Set ASE Configurations**

Create Shell Production Databases

- **AMS will create the PD^2 production database and SPS-I Interface Database on the ASE 12.0.0.4 server**

- **The databases will be created with the exact space allocation that existed previously on the Sybase 11.0.3.3 SQL Server**

  - **For databases that currently contain data and log segments on the same database device, AMS will create the ASE 12.0.0.4 database devices in such a way to correct the allocation issue**

  - **If allocation problems persist, additional measures may be necessary to correct the problem**

Restore Production Databases from Backup

- AMS will restore the PD^2 production database and SPS-I Interface Database from backup
- After the restores are completed, and the databases are brought online, the ASE server will automatically upgrade the databases to the 12.0.0.4 database format

Sybase DBCC

- **AMS will run a Sybase DBCC on the production database after it has been restored into Sybase ASE 12.0.0.4**
- **AMS will review the DBCC output to verify that there is no database corruption prior to continuing on with the upgrade to PD^2 v4.2 Increment 1**
  - **DBCC checkdb**
  - **DBCC checkalloc**
  - **DBCC checkcatalog**

Migrate User Information

- **AMS will re-create the Sybase logins associated with the various production databases**

- **Once the Sybase logins are imported into ASE 12.0.0.4, AMS will ensure that these logins are properly associated with the user information within the PD2 production database and SPS-I Interface Database**

- **Whenever possible, AMS will restore users along with their current passwords**
  - **For those cases where passwords are not able to be migrated along with user information, passwords will be reset to a default value**

Expand Production Database

- **During the upgrade process, several complete tables are temporarily copied within the PD2 database in order to preserve data integrity**
  - **AMS may need to add additional space to the production database in order to complete the upgrade**
  - **AMS may need to add additional space to the transaction log order to complete the upgrade**

Expand the Transaction Log and tempdb

- **Over time, the size of production databases at many sites have grown significantly**
  - **In some cases, increasing the size of the transaction log and tempdb have been overlooked**
- **AMS will work with the site to determine the proper sizing of the transaction log**
  - **Sybase recommends a data to log ratio of 5:1**
  - **AMS will only require that a site increase the size of the log if it will prohibit the completion of the upgrade process**
- **AMS will work with the site to determine the proper sizing of tempdb**
  - **Sybase recommends that the size of tempdb be equal to 25% of the largest production database on the ASE server**
  - **AMS recommends that the size of tempdb should be equal to 25% of the *queryable* data within the database**

Collect Pre-Upgrade DSI

- **At this point in the process, AMS will again collect Database Statistical Information (DSI)**
  - **Row count information will be recorded for all user tables within the PD^2 production database**
  - **The database snapshot utility will be executed**
- **The information gathered in this step will be compared against the information recorded earlier**
  - **AMS will check to ensure there is no data lost, or that no production data has changed**

Run the PD² Database Upgrade Installer

- **The PD² database upgrade is the most critical portion of the software upgrade process**
  - **AMS will execute the PD² database upgrade routine from a client workstation that has previously been upgraded to v4.2**
- **During the upgrade from PD2 v4.1e to v4.2, various updates are made to the production database including:**
  - **Addition of new user tables**
  - **Changes to current table structure**
  - **Reapplication of indexes, triggers, and database views**
  - **Installation of standard data including Cognos reports**

Collect Post Upgrade DSI

- **At this point in the process, AMS will collect Database Statistical Information (DSI) for the final time**
  - **Row count information will be recorded for all user tables within the PD^2 production database**
  - **The database snapshot utility will be executed**
- **The information gathered in this step will be compared to information gathered previously**
  - **AMS will check to see that no production data has changed and only expected changes to the database have occurred**

Clause Convert Utility

- **AMS will run the Clause Convert Utility against the PD² production database**

- **The v4.1e PD² database stores clauses in Microsoft Word (.doc) format, however, v4.2 Increment 1 clauses must be converted to rich text format (.rtf) files**

  - **The PD² Clause Convert Utility is a run-once utility that automatically retrieves clauses from the PD² database, converts them from .doc format to .rtf format, and returns the reformatted files to the PD² database**

PD² Reference Library

- **AMS will run the Reference Library installer against the PD² production database**
- **PD² 4.2 Increment 1 uses a 'web-based' Reference Library**
  - **The location of the Reference Library for every client is stored in the PD² database**
  - **The SmarText Reference Library included with v4.1e will not be deleted automatically**
  - **Sites may wish to continue using the SmarText Library if they have added custom books/bookshelves**

Clause Installer

- **After the PD$_2$ production database has been upgraded to v4.2, clauses in the database will need to be updated with the most current versions**
  - **AMS will download and install the latest v4.2 clauses and reference library updates from the AMS PD$_2$ web site**

PD² Application Server Framework (ASF)

- **The PD² ASF provides the ability to offload EDA file creation, as well as document generation from the individual client workstations**
  - **AMS will uninstall the PD² v4.1e ASF and install the PD² v4.2 ASF in its place**

Upgrade and Configure SPS-I

- **AMS will upgrade the Standard Procurement System – Integration (SPS-I) software in accordance with the SPS-I Installation and Upgrade Guide**
  - **Interface Agent (IA)**
  - **Interface Manager (IM)**
  - **Interface Database (IDB)**
  - **PD^2 Database Extensions**
- **AMS will ensure connectivity between the SPS-I modules and walk the site through the review of SPS-I configuration information**

FPDS Engine

- **AMS will install the FPDS Engine v2.2 in accordance with standard procedures**
- **The FPDS Engine requires the installation of each PD² client machine, as well as on the SPS-I Interface Agent**

Run the PD² V4.2 Increment 1 SR01 & SR02 Database Upgrade Installer

- **AMS will execute the PD² v4.2 Increment 1 Service Release 1 (SR01) & 2 (SR02) database upgrade routine from a client workstation that has previously been upgraded to v4.2 Increment 1**

- **During the upgrade from PD² v4.2 Increment 1 to Increment 1 SR01 & SR02, various updates are made to the production database including:**
  - **Changes to current table structure to support product enhancements**
  - **Changes to a database view**
  - **Application of new indexes**

Sybase Auditing

- **AMS will install and configure the auditing feature in Sybase ASE 12.0.0.4**
- **Sites can change configuration settings if necessary, however, defaults will set the Sybase auditing feature to log:**
  - **All actions by users with sa or sso role**
  - **All logins and logouts**
- **AMS will create rotating audit tables to ensure that the audit process is never suspended**
  - **Won't halt the server as has happened in the past**
  - **Older audit records may get lost if they have not been archived**

Sybase dbccdb

- **Sybase ASE allows for the creation of a database consistency check database (dbccdb), which can dramatically speed up the DBCC process**
  - **AMS will install and configure the dbccdb in accordance with the site's current production database size.**

Final Sybase DBCC

- **AMS will run the final Sybase DBCC on all databases using the newly created dbccdb**
- **AMS will review output before proceeding with the final backup so that any issues can be addressed**
  - **DBCC checkstorage**

Final Database Backup Procedures

- **AMS will review the Sybase Error Log prior to performing any and all backups**
- **Backup ASE 12.0.0.4 Databases**
  - **PD^2 production database**
  - **SPS-I Interface Database (IDB)**
  - **All Sybase system databases**
  - **Databases belonging to SPS add-on products (e.g., AcquiLine and ERS)**
- **AMS will review the Sybase Backup Log to ensure the successful completion of the backup process**

Test Database

- **AMS will create an exact copy of the PD² production database as a test database**
  - **A shell of the PD² test database will be created with the exact space allocation as the v4.2 production database**
  - **Once the shell is created, the Deployment Team will restore the latest backup of the production database.**
- **In the case where a site does not have room for the creation of a production database copy, a new PD² v4.2 database will be created for testing purposes.**
  - **AMS will not be running the database upgrade installer against an existing test database**

Unlock PD² Users

- **In order to continue from this point, select members of the user community should be allowed access to the test database to complete the SAUIG and MOS tasks**
  - **For those sites that do not have a copy of their production database as a test database, select users should be allowed into the production database to complete SAUIG and MOS tasks**
- **While testing is being completed, remaining members of the user community can be allowed access to the production database**
- **At this point in the process, the site is no longer considered to be "down"**

Post-Upgrade MOS/SAUIG Tasks

- After the upgrade completes, select PD² users should begin to validate the success of the upgrade by performing the Measures of Success (MOS) tasks

- Sites should plan on spending no more than 2 - 4 hours to complete the various test scripts included in the MOS

- In addition to completing the MOS tasks, select PD² functional users and PD² System Administrators should review and complete the post-upgrade tasks in the SAUIG

Perform Remaining Client Upgrades

- **The AMS Deployment team will upgrade up to ten (10) client machines. Each PD2 client workstation will be installed with the following software:**
  - **Procurement Desktop-Defense v4.2**
  - **Cognos Impromptu/Powerplay**
  - **PD2 Cognos Catalog (local install or network install)**
  - **PD2 Reference Library (local install or network install)**
  - **Sybase Central**
  - **SQL Advantage**

Unlock Remaining PD² Users

- **As the client machines are being upgraded, the remaining PD2 users should be allowed back into the system**
  - **If users have been working in the test database for post-upgrade MOS testing, they should now be pointed back to the production database**

Deployment Out-Brief Meeting

- **The Out-Brief Meeting allows the site and the AMS team members the opportunity to discuss the 4.2 upgrade**
- **Topics include:**
  - **Issues encountered during the installation process and associated resolutions**
  - **Items for further action for either the site or the AMS Deployment Team**
  - **Questions and/or concerns the site may have**
  - **Review of exit criteria and deployment checklist**
- **This meeting should be held as close to the end of the v4.2 upgrade process as possible**

Deployment Exit Criteria

- **AMS will remain onsite no more than 4 hours while the site executes MOS tasks**
- **Sites will be required to sign the deployment checklist before the team leaves and FAX back to the JPMO**
- **AMS is responsible for turning around the install/upgrade report within 7 business days of the completion of the upgrade**
  - **Copies of the report will be sent to the JPMO, who will forward to the appropriate site POCs**